

## **Water Quality Data Management – Monitoring, evaluating, analyzing and presenting data using WISKI-WQM**

**Dr. Frank Schlaeger<sup>1</sup>, Stan Malinky<sup>2</sup>, and Dr. Jürgen Stein<sup>1</sup>**

<sup>1</sup>KISTERS AG., Charlottenburger Allee 5, D-52068 Aachen, Germany

<sup>2</sup>JBS Instruments Inc. West Sacramento, CA

### **Biographical Sketches of Authors**

Dr. Frank Schlaeger is a civil engineer and specialized in water resources management. His thesis at the University of Aachen is about long-term simulation of water quality in mining affected river catchments. After finishing his thesis he moved to KISTERS in January 2002. Since then he worked as quality assurance manager as well as project manager. Furthermore he leads the development of the water quality module WQM.

Stan Malinky, who is bachelor of science civil engineering, is the vice president of JBS instruments. After being project manager of hardware development of hydrological data collection he now serves as senior project engineer and senior sales engineer for the sale of hardware and software for environmental data management.

Dr. Jürgen Stein is a civil engineer and specialized in water resources management. His thesis at the University of Aachen deals with mathematical and physical simulation of flow in natural channels. After moving from the North Rhine-Westphalia State Environment Agency to KISTERS he became head of the division resources management systems. He also serves as general project manager, senior project engineer, and senior sales engineer.

### **Abstract**

The recent adoption of the European Water Framework Directive (WFD) has led to the reforming of the European water laws. The WFD places central emphasis on river basin management as well as water resource management into the future. This is, in particular regarding the qualitative aspects such as the preservation of a good ecological and chemical condition of our inland waters. Because of the need to monitor, quantify and identify the affects of water resources management – and considering the wide range of relevant influencing variables – the application of environmental software is inevitable.

WISKI and its water quality module WQM is a software package for monitoring, evaluating, analyzing and presenting data. WISKI is a client/server system based on relational databases, designed in cooperation with water agency authorities, engineers and hydrologists. It combines the modern standards of data management with advanced tools to collect, edit, store and present time series data to intranet, internet and GIS users. WISKI consists of three parts, a remote data acquisition server (SODA), a central database server for storage and management, and a windows based hydrological workbench. The system allows the automatic and effortless flow of time series data from the measuring site into the database. The data is then reviewed using powerful graphical and tabular interface tools.

The water quality module WQM was developed within the scope of an R&D project. To attain the standards of the WFD the aim of this project was the development of a water quality data management system which allows the tight link to water quantity data as well as the data stream from import of laboratory systems data to automatic data validation, data analysis, automatic calculation of derived values, the export in different formats, and by linking to the WISKI ArcGIS extension the automatic generation of water quality maps.